

Region One Hazard Tree and Forest Management Final Environmental Assessment

MEPA/NEPA/HB495 CHECKLIST

PART I. PROPOSED ACTION DESCRIPTION

1. Type of Proposed State Action:

Fish, Wildlife and Parks (FWP), Region One, is responsible for management of several thousand acres of land in state parks and fishing access sites. These sites range in size from .05 to 3,000 acres. The primary purpose of these properties is for recreation, with wildlife habitat values of secondary importance. A large percentage of this land is forestland. Areas of concentrated public use on these lands range from primitive campsites and hiking trails to highly developed facilities. FWP wants to maintain these properties over time for safe public use, with a natural forest cover that is aesthetically pleasing, beneficial to recreation and wildlife, healthy, and wind resistant. While fire suppression is not the primary objective, FWP recognizes the obligation to reduce fuel loads in order to avoid catastrophic fires that would impact public land and adjacent private property.

The proposed action is to develop a standardized approach to forest management, setting direction for the level and type of public involvement before actions are taken. In addition, FWP wishes to adopt the attached Vegetation and Hazard Tree Management Recommendations in order to establish a framework under which to manage forest properties. These recommendations were written by a certified forester, taking into account recreation, wildlife, and forest health concerns.

2. Agency Authority for the Proposed Action:

Montana Codes Annotated 23-1-101

3. Name of Project:

Programmatic Hazard Tree and Forest Management Plan

4. Name, Address, and Phone Number of Project Sponsor (if other than the agency):

5. If Applicable:

Estimated Construction/Commencement Date:

Estimated Completion Date:

Current Status of Project Design (% complete):

6. Location Affected by Proposed Action (county, range, and township):

All properties affected are located in Flathead, Lincoln, Lake, or Sanders Counties. Please see Appendices A and B for legal descriptions and maps.

7. Project Size: Estimate the number of acres that would be directly affected that are currently:

| | Acre | | Acres |
|---------------------------------|---------|-----------------------|-------|
| (a) Developed: | | (d) Floodplain | _____ |
| residential | _____ | | |
| industrial | _____ | (e) Productive: | |
| | 6721.19 | irrigated cropland .. | _____ |
| (b) Open | acres | dry cropland | _____ |
| | | forestry | _____ |
| (c) Wetlands/Riparian Areas ... | _____ | rangeland | _____ |
| | | other | _____ |

8. **Map/Site Plan: Attach an original 8½" x 11" or larger section of the most recent USGS 7.5' series topographic map showing the location and boundaries of the area that would be affected by the proposed action. A different map scale may be substituted if more appropriate or if required by agency rule. If available, a site plan should also be attached.**

Please see Appendix B

9. **Narrative Summary of the Proposed Action or Project, Including the Benefits and Purpose of the Proposed Action:**

The proposed action is to set up a systematic approach to managing forest habitats on FWP-managed parks and fishing access sites. A standardized, tiered approach to public involvement and notification regarding forest management efforts is outlined below. For hazardous tree removal and small treatments, this document outlines the public notification required. For larger projects it lays out a tiered system of public involvement requirements. Treatments that encompass more than ten acres on any individual site, or that will occur more frequently than once every three years, will have a separate environmental assessment and public comment period specifically for that treatment.

A forester ¹ was hired to complete an assessment of all the park and fishing access sites in Region One. His recommendations are in the attached "Montana Department of Fish, Wildlife and Parks, Region One Vegetation and Hazard Tree Management Recommendations." This document is attached in Appendices C and D. Recommendations for actions were based on an analysis of climax habitat type suitable for particular areas and recognition of FWP's desire to protect wildlife habitat while protecting people involved in recreational activities on lands managed by this agency. Primary consideration was given to recreational values (such as aesthetics, visitor safety, limiting noise during peak seasons, minimizing resource disturbance) and protecting or enhancing wildlife values. While fire suppression is not a primary objective, FWP recognizes the need to reduce fuel loads in order to avoid catastrophic fires that would impact public land and adjacent private property. Other goals considered in reaching these recommendations were achieving/maintaining a variety of age classes, protecting old growth

¹ Fred Hodgeboom graduated with a B.S. in Forest Management in 1963. He is a graduate of the U.S. Forest Service Continuing Education in Forest Ecology and Silviculture, with graduate study at the University of Idaho and Washington State University. His 32-year career with the U.S. Forest Service includes serving as the Region One Certified Silviculturist in the Idaho Panhandle. He is a Fellow in the Society of American Foresters.

trees when possible, and the reduction of disease and insect infestations. Please see Appendix D for the recommended treatments for each FWP site.

As part of the effort to reach the goals stated above, certain actions would be taken in the harvest of any tree:

1. When possible, stumps would be cut to ground height in order to avoid tripping hazards and to have less impact on the aesthetics of an area when a harvest is completed.
2. Management actions would be done during the off-season (October – April) to avoid noise during the peak recreation season. Immediate safety concerns from hazardous trees would be the exception.
3. All treatments will be done in winter to lessen ground disturbance, unless the treatment is specifically chosen for interpretation and education, or an exception is needed to achieve a specific forest-related goal.
4. Equipment used in any harvest operation will be appropriate for the size of the harvest, but chosen to leave the smallest possible impacts on the understory when the project is completed.
5. To minimize aesthetic impacts, trees to be left would be marked in one of three ways:
 - a. Flagged, with the flags removed after harvest.
 - b. Tagged at the base of the tree.
 - c. Painted. If paint is used, the trees will be repainted brown when the treatment is completed.
6. Slash will be piled and burned, with the remaining debris buried, or chipped and scattered.

In following the recommendations as outlined in Appendix C, FWP is proposing a tiered approach to public involvement and notification regarding forest management efforts. Any treatment that will encompass an area greater than ten acres on any individual site, or any treatment that is scheduled to occur more frequently than once every three years, will have an environmental assessment and public comment period specific to that treatment. That environmental assessment will be completed before the treatment is approved. Lesser levels of public involvement are called for in actions that will impact smaller acreages or for hazardous tree removal. An effort will be made to coordinate management efforts for economic efficiency, i.e., small treatments at several sites could be combined into one project to make the project economically viable. If each individual site's treatment area would be less than ten acres, this environmental assessment will be sufficient for the action.

Other literature researched and used for this project include:

Guide to Streamside Management Zone Laws and Rules, Montana Department of Natural Resources and Conservation, Services Forestry Bureau, August, 2002.

Water Quality BMPs for Montana Forests, Logan, Robert, Montana State University, 2001

Best Management Practices Notification Law, 76-13-101.

Detection and Correction of Hazard Trees in Washington's Recreation Areas, Mills, Lynn and Russell Kenelm, U.S. Forest Service, October, 1980.

Following are the recommendations based on habitat type and the level of public notification/comment that will be required before management actions can be taken. Treatment recommendations will be made on a per-site basis. Site size can range from .05 acre to 2,989.46 acres, as determined in Appendix A. The result would be that on a site such as Teakettle Fishing Access Site (3.2 acres), the entire site could be treated in one action, while at

a site such as Thompson Chain of Lakes (3,000 acres), a separate environmental assessment would be required in order to gain any economies of scale, i.e., treating ten acres every three years would be insufficient to maintain forest health.

Routine maintenance and removal of risk trees as needed: Removal of individual diseased or dying trees and removal of hazardous trees are maintenance activities that will be done on an “as needed basis.” A tree will be removed if it is determined to be diseased, based on physical deformities, crown health, or symptoms of insect or disease. A tree is deemed to be “hazardous” if it is determined that it poses a safety risk to the public or facilities. A tree may be healthy but hazardous (if leaning over a campsite), or diseased but not hazardous (if it falls, it has no human or structural target).

Detection and Correction of Hazard Trees in Washington’s Recreation Areas will be used as a guiding document for hazardous tree removal. No public notification or involvement will be sought unless hazardous or diseased tree removal involves more than 5% of the trees on a site. If more than 5% of the trees on a site are deemed to be in need of removal, public notification through legal advertisements and the FWP Internet site will be done.

Group Selection Harvest (<10 acres/3 years): Protect and reproduce ponderosa pine by harvesting encroaching trees for 75-150 feet around existing maternal trees. Treat 10 acres or less per site, with treatments scheduled no more frequently than once every 3 years. Public notification through legal advertisements and the FWP Internet site will be done.

Pre-Commercial Thinning (<10 acres/5 years): Pre-commercial thinning of dense sapling stands to release ponderosa and larch. Trees that are taken are usually no more than five inches in diameter, and while they can be sold for chip, have no commercial value as lumber. FWP would treat no more than 10 acres per site, with treatment frequency at no more than one treatment every 5 years. A forester will be hired to design this type of project. Wildlife biologists will be involved in the design of the project. A walk-through of the project will be held for the public, with public notification through the news media, legal advertisements, and the FWP Internet site. A 30-day public comment period will be held, and the project adjusted accordingly.

Pre-Commercial Thinning (≥10 acres/5 years): Pre-commercial thinning of dense sapling stands to release ponderosa and larch on larger parcels. Trees that are taken are usually no more than five inches in diameter and, while they can be sold for chip, have no commercial value as lumber. A forester will be hired to design the project, and an environmental assessment will be completed, along with required public notification and comment period. The amount of land to be treated and the frequency of treatment would be determined by the forester hired to design the project based on the goals for each site. It is anticipated that this type of pre-commercial thinning project will occur in conjunction with some commercial thinning to help offset overall costs.

Commercial Thinning: Commercial thinning of dense stands to average 25 feet of spacing is recommended at some sites. A forester will be hired to design the project, and an environmental assessment will be completed, along with required public notification and comment period. The amount of land to be treated and the frequency of treatment would be based on specific project goals, and determined by the forester hired to design the project, in consultation with a wildlife biologist. Generally, no more than 50 acres per site would be treated, with a rotation of 3-to-5 years between entries.

Pre-commercial and commercial thinning projects would be coordinated among sites to achieve economies of scale. It is anticipated that projects would include more than one site being treated at a time to reduce costs. Any revenues generated above the cost of replanting and rehabilitation of the landscape would go into the Real Property Trust Account. Interest from that account can be spent as authorized by the legislature.

10. Listing of Any Other Local, State, or Federal Agency That Has Overlapping or Additional Jurisdiction:

(a) Permits:

| <u>Agency Name</u> | <u>Permit</u> | <u>Date Filed/#</u> |
|--------------------|---------------|---------------------|
|--------------------|---------------|---------------------|

(b) Funding:

| <u>Agency Name</u> | <u>Funding Amount</u> |
|--------------------|-----------------------|
|--------------------|-----------------------|

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

| <u>Agency Name</u> | <u>Type of Responsibility</u> |
|--------------------|-------------------------------|
|--------------------|-------------------------------|

10. List of Agencies Consulted During Preparation of the EA:

Department of Natural Resources and Conservation, State Lands Division, Division of Forestry.

PART II. ENVIRONMENTAL REVIEW

1. Evaluation of the impacts of the proposed action, including secondary and cumulative impacts on the physical and human environment.

A. PHYSICAL ENVIRONMENT

| 1. <u>LAND RESOURCES</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|---|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| >a. Soil instability or changes in geologic substructure? | | | X | | Yes | 1a |
| b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility? | | | X | | Yes | 1b |
| >c. Destruction, covering, or modification of any unique geologic or physical features? | | X | | | | |
| d. Changes in siltation, deposition, or erosion patterns that may modify the channel of a river or stream, or the bed or shore of a lake? | | | X | | Yes | 1d |
| e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard? | | X | | | | |
| f. Other (list) | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

1a and b: With the removal of trees, some soil instability could occur. This will be mitigated through the planting of native grasses and shrubs to stabilize the soils. If steep slopes are involved, other methods such as matting or the placement of straw will be used to ensure no erosional gullying or channeling occurs. Management practices will be utilized to minimize soil compaction and disturbance. Factors such as seasonality of management action, equipment type, landform, and soil type will all be considered before management action is taken. Any cuts of over ten acres would require an environmental assessment specific to that project, which would address impacts for the specific project.

1d: Best Management Practices, as set by the Department of State Lands, will be followed to minimize impacts to stream banks or beds. Please refer to a copy of Best Management Practices.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 2. <u>AIR</u> Will the proposed action result in: | IMPACT [⚙] | | | | Can Impact Be Mitigated [⚙] | Comment Index |
|--|----------------------|------|--------------------|-------------------------|--------------------------------------|---------------|
| | Unknown [⚙] | None | Minor [⚙] | Potentially Significant | | |
| ➤a. Emission of air pollutants or deterioration of ambient air quality? (Also see 13c.) | | | X | | | 2a |
| b. Creation of objectionable odors? | | X | | | | |
| c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally? | | X | | | | |
| d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants? | | X | | | | |
| ♦e. For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air quality regs? (Also see 2a.) | | X | | | | |
| f. Other | | | | | | |
| | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (Attach additional pages of narrative if needed):

2a: During forestry operations some emissions from equipment and dust from ground disturbance will occur. This will be minimal and will end when the forestry project is completed.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 3. <u>WATER</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|---|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Discharge into surface water or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity? | | | X | | Yes | 3a |
| b. Changes in drainage patterns or the rate and amount of surface runoff? | | X | | | | |
| c. Alteration of the course or magnitude of floodwater or other flows? | | X | | | | |
| d. Changes in the amount of surface water in any water body or creation of a new water body? | | X | | | | |
| e. Exposure of people or property to water-related hazards such as flooding? | | X | | | | |
| f. Changes in the quality of groundwater? | | X | | | | |
| g. Changes in the quantity of groundwater? | | X | | | | |
| h. Increase in risk of contamination of surface or groundwater? | | | X | | Yes | 3h |
| i. Effects on any existing water right or reservation? | | X | | | | |
| j. Effects on other water users as a result of any alteration in surface or groundwater quality? | | X | | | | |
| k. Effects on other users as a result of any alteration in surface or groundwater quantity? | | X | | | | |
| ♦♦l. For P-R/D-J, will the project affect a designated floodplain? (Also see 3c.) | | X | | | | |
| ♦m. For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a.) | | X | | | | |
| n. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

3a and 3h: Best Management Practices, as set by the Department of State Lands will be followed to minimize impacts to stream banks or beds. In addition, these practices should minimize turbidity caused by runoff. Please refer to a copy of Best Management Practices.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 4. <u>VEGETATION</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|---|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Changes in the diversity, productivity, or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)? | | | X | | Yes | 4a |
| b. Alteration of a plant community? | | | X | | | 4b |
| c. Adverse effects on any unique, rare, threatened, or endangered species? | | X | | | | 4c |
| d. Reduction in acreage or productivity of any agricultural land? | | X | | | | |
| e. Establishment or spread of noxious weeds? | | | X | | Yes | 4e |
| ♦♦f. For P-R/D-J, will the project affect wetlands, or prime and unique farmland? | | | X | | Yes | 4f |
| g. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

4a and b: With the removal of some trees, plant species that require increased sun will increase, while shade-tolerant species will decrease. This change will be minor and is a desired outcome of the proposed action. Seeding with native grass mixes will occur after ground disturbance to discourage runoff. In some areas small trees will be planted to encourage a diverse understory and to provide future climax trees.

4c: Most actions proposed under this EA would have no impact on unique, rare, threatened, or endangered species because of their small scale and proximity to areas of concentrated human use. We will develop specific measures to avoid impacts to these resources in any instance where unique, rare, threatened, or endangered species are present within the proposed project area based on site-specific recommendations developed by appropriate specialists.

4e: Noxious weeds could impact areas with ground disturbance from tree removal. Work will be done in the winter to minimize ground disturbance. In addition seeding with native grass mixes will occur if the ground is disturbed. In addition, disturbed areas will be monitored for noxious weeds, and mechanical and/or biological controls will be used to repress/eliminate noxious weeds. The areas are monitored and managed under the Region One Weed Management Program, as kept on file in the FWP Region One Headquarters.

4f: Some trees may be removed from wetland areas if they are determined to be hazardous or are a threat to the health of surrounding trees. Part of the determination if a tree is hazardous is that it has a substantial likelihood of falling and hitting structures, facilities, or people. Since facilities that attract people are normally not built in wetland areas, hazardous tree removal in wetland areas would be minimal. Efforts would be made to do this during winter to minimize ground impacts and would fully comply with Montana Streamside Management Zone laws and rules.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 5. <u>FISH/WILDLIFE</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Deterioration of critical fish or wildlife habitat? | | X | | | | |
| b. Changes in the diversity or abundance of game animals or bird species? | | X | | | | 5b |
| c. Changes in the diversity or abundance of nongame species? | | X | | | | 5c |
| d. Introduction of new species into an area? | | X | | | | |
| e. Creation of a barrier to the migration or movement of animals? | | X | | | | |
| f. Adverse effects on any unique, rare, threatened, or endangered species? | | X | | | | |
| g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest, or other human activity)? | | X | | | | |
| ♦♦h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f.) | | X | | | | 5h |
| ♦i. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d.) | | X | | | | |
| j. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

5b and c: Individual hazardous tree removal would have no impact on wildlife species, though individual animals may be impacted if a nesting tree is removed. Wildlife biologists will be consulted on any group selection, pre-commercial thinning, or commercial thinning project to minimize wildlife disturbance.

5h: Grizzly bear are present in areas around Bigfork and west of Kalispell as transients. They are not known to inhabit the state parks and fishing access sites on a regular basis. Wolves are present west of Kalispell and, while they may move through the Thompson Chain of Lakes area, no packs have been identified that are living at Thompson Chain of Lakes. Bald Eagles nest and perch at several locations. The Montana Bald Eagle Management Plan will be followed as to timing of any group selection, pre-commercial thinning, or commercial thinning operations within Bald Eagle nesting or rearing areas, and biologists will be consulted before cutting any nesting or perching trees.

- ⚙ Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.
- Include a narrative description addressing the items identified in 12.8.604-1a (ARM).
- ♦ Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.
- ♦♦ Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

B. HUMAN ENVIRONMENT

| 6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Increases in existing noise levels? | | | X | | | 6a |
| b. Exposure of people to severe or nuisance noise levels? | | | X | | | 6b |
| c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property? | | X | | | | |
| d. Interference with radio or television reception and operation? | | X | | | | |
| e. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

6a and b: During tree removal operations, chain saw and equipment noises will increase noise levels and may cause a nuisance for adjacent neighbors or visitors. Care will be taken to keep activities between 8:00 a.m. and 5:00 p.m. in sites adjacent to residences.

| 7. <u>LAND USE</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Alteration of or interference with the productivity or profitability of the existing land use of an area? | | X | | | | |
| b. Conflict with a designated natural area or area of unusual scientific or educational importance? | | X | | | | |
| c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action? | | X | | | | |
| d. Adverse effects on or relocation of residences? | | X | | | | |
| e. Other: _____ | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 8. <u>RISK/HEALTH HAZARDS</u> | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| Will the proposed action result in: | | | | | | |
| a. Risk of an explosion or release of hazardous substances (including but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption? | | | X | | Yes | 8a |
| b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan? | | X | | | | |
| c. Creation of any human health hazard or potential hazard? | | | X | | Yes | 8c |
| d. For P-R/D-J, will any chemical toxicants be used? (Also see 8a.) | | | X | | | 8d |
| e. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

8a and d: The equipment removing timber will use gasoline and oil. Care will be taken to prevent spills and house substances away from dwellings. Large amounts of gasoline or oil will not be stored on site.

8c: Danger would exist for the public if they entered into an area where active treatment is occurring. Therefore, areas with ongoing management activity will be closed until that activity is completed.

| 9. <u>COMMUNITY IMPACT</u> | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| Will the proposed action result in: | | | | | | |
| a. Alteration of the location, distribution, density, or growth rate of the human population of an area? | | X | | | | |
| b. Alteration of the social structure of a community? | | X | | | | |
| c. Alteration of the level or distribution of employment or community or personal income? | | X | | | | |
| d. Changes in industrial or commercial activity? | | X | | | | |
| e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods? | | X | | | | |
| f. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in: | IMPACT [⊗] | | | | Can Impact Be Mitigated [⊗] | Comment Index |
|---|----------------------|------|--------------------|----------------------------|--|------------------|
| | Unknown [⊗] | None | Minor [⊗] | Potentially Significant | | |
| a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify: | | X | | | | |
| b. Will the proposed action have an effect upon the local or state tax base and revenues? | | X | | | | |
| c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electrical power, natural gas, other fuel supply or distribution systems, or communications? | | X | | | | |
| d. Will the proposed action result in increased use of any energy source? | | | X | | | 10d |
| ➤e. Define projected revenue sources. | | | | | | |
| ➤f. Define projected maintenance costs. | | | | | | |
| g. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

10d: Increased fuel will be used to remove timber, but the amount of increase will be insignificant.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 11. <u>AESTHETICS/RECREATION</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Alteration of any scenic vista, or creation of an aesthetically offensive site or effect that is open to public view? | | | X | | Yes | 11a |
| b. Alteration of the aesthetic character of a community or neighborhood? | | | X | | | 11b |
| c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach tourism report.) | | | X | | | 11c |
| d. For P-R/D-J, will any designated or proposed wild or scenic rivers, trails, or wilderness areas be impacted? (Also see 11a, 11c.) | | X | | | | |
| e. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

11a and b: Scenic vista and park setting will be changed due to removal of some trees. The understory will be opened in some areas creating more of a mosaic effect in forest canopies that currently exist. Some people may not find this as aesthetically pleasing as the current condition. However, this action will also remove hazardous trees to protect visitors and reduce the potential for catastrophic fire, which would greatly impact the aesthetics of a park area. Visual impacts will be minimized through cutting stumps to ground level, or removing them altogether, through the removal of slash through chipping or burning and burying, and through spacing and timing of incursions.

11c: During ongoing management activities, sites would be closed to public use for safety considerations. These closures would be limited in nature and would be timed to avoid peak use seasons when possible.

- ⚙ Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.
- Include a narrative description addressing the items identified in 12.8.604-1a (ARM).
- ◆ Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.
- ◆◆ Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

| 12. <u>CULTURAL/HISTORICAL RESOURCES</u> Will the proposed action result in: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|--|---------|------|-------|----------------------------|-------------------------------|------------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Destruction or alteration of any site, structure, or object of prehistoric, historic, or paleontological importance? | | X | | | | 12a |
| b. Physical change that would affect unique cultural values? | | X | | | | |
| c. Effects on existing religious or sacred uses of a site or area? | | X | | | | |
| d. For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12a.) | | X | | | | |
| e. Other: | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (Attach additional pages of narrative if needed):

12a: Before pre-commercial or commercial thinning, SHPO and the Salish Kooteni Tribe will be contacted to ensure protection of cultural sites. It is not anticipated that hazardous or diseased tree removal will disturb cultural resources. Group selection harvests will be done in winter months to minimize ground disturbance, which could impact cultural or archeological sites.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

C: SIGNIFICANCE CRITERIA

| 13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole,: | IMPACT | | | | Can Impact Be Mitigated | Comment Index |
|---|---------|------|-------|-------------------------|-------------------------|---------------|
| | Unknown | None | Minor | Potentially Significant | | |
| a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources, which create a significant effect when considered together or in total.) | | X | | | | |
| b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur? | | X | | | | 13b |
| c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard, or formal plan? | | X | | | | |
| d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed? | | X | | | | |
| e. Generate substantial debate or controversy about the nature of the impacts that would be created? | | | X | | | 13e |
| ♦f. For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e.) | | | X | | | 13f |
| ♦♦g. For P-R/D-J, list any federal or state permits required. | | | | | | |

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (Attach additional pages of narrative if needed):

13b: While the proposed action is not expected to produce extremely hazardous effects, inaction is anticipated to have extremely hazardous effects. Failure to remove hazardous trees will result in injury to persons or damage to property. Failure to remove diseased trees will impact future forest health. Failure to manage forest health may ultimately result in a catastrophic fire, which would impact recreational property as well as adjacent properties.

13e and f: It is anticipated that there will be lively debate regarding particular prescriptions on particular pieces of property, what the impacts will be of those actions, and how those impacts will affect adjacent neighbors and the recreating public. It is also anticipated that going through a public comment period before hazardous trees are removed would create liability for FWP until the tree is removed. This document is set up to provide for public comment on actions that will be more controversial, provide information for actions that will not be as controversial, and provide for immediate action for maintenance activities on individual trees to ensure public safety.



Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or can not be evaluated.



Include a narrative description addressing the items identified in 12.8.604-1a (ARM).



Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.



Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

PART II. ENVIRONMENTAL REVIEW (CONTINUED)

1. Description and analysis of reasonable alternatives (including the no-action alternative) to the proposed action, whenever alternatives are reasonably available and prudent to consider, and a discussion of how the alternatives would be implemented:

Alternative 1: No Action: Do not cut trees; allow for natural progression. This does not provide for public safety from hazardous trees, does not promote forest health, and does not reduce the opportunity for catastrophic fire.

Cumulative Impact:

Impacts from this no-action alternative would be less visible to the public, unless hazardous trees damage property or injure people, or until lack of action leads to large tree stand scale die-offs, eventually leading to catastrophic fire.

Land Resources: The no-action alternative alone would not add to soil instability or changes in geologic structure; cause soil erosion or compaction; change rates of siltation, deposition or erosion patterns; nor expose people to landslides or ground failure. However, if fuels continue to build up in public use areas, the risk of fire will increase. If a fire were started, the likelihood of it being of catastrophic level would be much greater. With the hotter fires that result from high fuel loads, the top layer of soil could be sterilized, which could result in erosion issues in future years.

Air: The no-action alternative would not impact air quality, unless the lack of action resulted in catastrophic fire.

Water: The no-action alternative would have no impact on surface or subsurface water quality or quantity, nor would it impact any existing water rights. A forested environment slows runoff, and increases water storage. However, the management actions listed in this assessment should create no significant change in the ability of the forest to impact the watershed. If the failure to manage diseased trees or remove ladder fuels results in catastrophic fire, water quality will be impacted via changes in drainage patterns, increased siltation, erosion, and increased likelihood of flooding.

Vegetation: The no-action alternative will allow FWP properties to continue to be impacted by beetle kill, fungus, root rot, and other tree health issues due to the overcrowding of trees, causing stress and making the trees more susceptible to disease issues. This, in time, would change the diversity and productivity of plant species and allow the continued alteration of the plant community. The spread of noxious weeds would be inhibited because no ground disturbance would occur.

Fish and Wildlife: Bird species that rely on snags would benefit from the no-action alternative. As an example, Snowy Owls nest in mistletoe, and the amount of mistletoe would be greater if no action is taken. Ungulates would be negatively impacted as forage is

reduced with increased tree densities. No endangered species would be negatively impacted by the no-action alternative.

Noise/Electrical Effects: The no-action alternative would not increase existing noise levels, or expose people to severe or nuisance noise. No electrostatic or electromagnetic effects would exist, and there would be no interference with radio or television reception or operation.

Land Use: All the areas included in this assessment are used for recreation. The no-action alternative would not impact that use, unless the lack of action results in catastrophic fire in the future.

Risk/Health Hazards: The no action alternative has no risk of explosion or release of hazardous substances. There is no effect on emergency response plans. The no-action alternative does have an effect on potential fire hazard and individual safety. With the leaving of ladder fuels, and the continued buildup of dead timber on the forest floor, the opportunity for fire increases annually. Additionally, the failure to remove hazardous trees puts the public at risk for injury or death if a tree falls due to age or disease. The falling of a tree can also damage property or equipment belonging to the public.

Community Impact: The no-action alternative will have no impacts in the density or growth rate of the human population of the area. It will not alter the social structure of the community or change the level or distribution of employment or commercial activity. The action will not increase traffic hazards or affect existing transportation facilities.

Public Service/Taxes/Utilities: The no-action alternative will have no impact on public services.

Aesthetics/Recreation: The no-action alternative will not alter any scenic vista or create an aesthetically offensive site. It will not alter the character of the community or change the quality or quantity of recreation. However, if catastrophic fire results from inaction, there will be major impacts to the aesthetics of highly valued recreation property.

Cultural/Historical Resources: The no action alternative will not affect any historic or cultural resources.

Alternative 2: Current Management: Continue to manage hazardous trees as a maintenance function. Write individual environmental assessments to any other management action for forest health issues. This provides for visitor safety and the highest amount of public input, but is costly and time-consuming to implement, creating significant cost and delay before management action can take place.

Cumulative Impact:

Because of the requirement for individual environmental assessments for each action, actions will be slowed or, as an alternative, larger actions will take place to cover all the work that will be needed, making fewer larger projects instead of more smaller projects over a period of time. This would lengthen the time between entrances, but would make the entrances larger when they do occur.

Because treatments would probably be larger, to gain efficiency in the public process required, it is anticipated that the proposed action would generate more controversy than those under Alternative 3. Lively debate regarding particular prescriptions on particular pieces of property, what the impacts will be of those actions, and how those impacts will affect adjacent neighbors and the recreating public will occur.

Land Resources: With the removal of trees, some soil instability could occur. This will be mitigated through the planting of native grasses and shrubs to stabilize soils. If steep slopes are involved, other methods such as matting or the placement of straw will be used to ensure no gullying or channeling occurs. Best management practices, as set by the Department of State Lands will be followed to minimize impacts to stream banks or beds. Because larger treatments would be done with fewer entries, there is a higher opportunity for erosion with this alternative than Alternative 3.

Air: During forestry operation some emissions from equipment and dust from ground disturbance will occur. This will be minimal and will end when the project is completed. With fewer, larger entries, emissions would be greater when they were occurring, but would not be as frequent as Alternative 3.

Water: Best Management Practice, as set by the Department of State Lands will be followed to minimize impacts to stream banks or beds. In addition, these practices should minimize turbidity caused by runoff.

Vegetation: With the removal of some trees, plant species that require increased sun will increase, while shade-tolerant species will decrease. This change will be minor and is a desired outcome of the proposed action. Seeding with native grass mixes will occur after ground disturbance to discourage runoff. In some areas small trees will be planted to encourage a diverse understory and to provide future climax trees.

Because fewer, larger entries would be made, there would be a greater change for impacts to unique, rare, threatened, or endangered species. Because environmental assessments would be done for each action, specific measures would be taken to avoid impacts to these resources in any instance where unique, rare, threatened, or endangered species are present within the proposed project area based on site-specific recommendations developed by appropriate specialists.

Seeding with native grass mixes will occur after ground disturbance. In addition, disturbed areas will be monitored for noxious weeds, and mechanical and/or biological controls will be

used to repress/eliminate noxious weeds. Because individual disturbances would be larger, there would be greater opportunity for noxious weeds to gain a foothold at some sites. Weed management would be incorporated into the Region One Weed Management Program, as kept on file in the FWP Region One Headquarters.

Some trees may be removed from wetland areas if they are determined to be hazardous or are a threat to the health of surrounding trees. Part of the determination if a tree is hazardous is that it has a substantial likelihood of falling and hitting structures, facilities, or people. Since facilities that attract people are normally not built in wetland areas, hazardous tree removal in wetland areas would be minimal. Efforts would be made to do this during winter to minimize ground impacts and would fully comply with Montana Streamside Management Zone laws and rules.

Fish and Wildlife: Impacts to wildlife would be the same under either Alternative 2 or 3, as wildlife biologists would be consulted before work was completed. With fewer larger projects, temporary displacement of wildlife may be greater under Alternative 2.

Individual hazardous tree removal would have no impact on wildlife species, though individual animals may be impacted if a nesting tree is removed. Wildlife biologists will be consulted on any group selection, pre-commercial thinning, or commercial thinning project to minimize wildlife disturbance.

Grizzly bear are present in areas around Bigfork and west of Kalispell as transients. They are not known to inhabit the state parks and fishing access sites on a regular basis. Wolves are present west of Kalispell and, while they may move through the Thompson Chain of Lakes area, no packs have been identified that are living at Thompson Chain of Lakes. Bald Eagles nest and perch at several locations. The Montana Bald Eagle Management Plan will be followed as to timing of any group selection, pre-commercial thinning, or commercial thinning operations within Bald Eagle nesting or rearing areas, and biologists will be consulted before cutting any nesting or perching trees.

Noise/Electrical Effects: Due to fewer, larger operations, noise effects would be greater under Alternative 2, but disturbance would be less frequent. During tree removal operations, chain saw and equipment noises will increase noise levels and may cause a nuisance for adjacent neighbors or visitors. Care will be taken to keep activities between 8:00 a.m. and 5:00 p.m. in sites adjacent to residences.

Land Use: All the areas included in this assessment are used for recreation. Neither Alternative 2 nor 3 will have impacts on existing land use, outside of the time when the area would be closed during treatments. Neither Alternative 2 nor 3 would conflict with designated natural area or with existing land use in a way that would prohibit the proposed action.

Risk/Health Hazards: The equipment removing timber will use gasoline and oil. Care will be taken to prevent spills and house substances away from dwellings. Large amounts of gasoline or oil will not be stored on site.

Danger would exist for the public if they entered into an area where active treatment is occurring. Therefore, areas with ongoing management activity will be closed until that activity is completed.

Community Impact: There will be no impacts that will alter the distribution, density, or growth rate of the human population in the area. There will be no change in the social structure of the community, employment, income, or commercial activity. Because of fewer larger treatments under this alternative, there could be temporary increases in traffic to move materials from the site being treated.

Public Service/Taxes/Utilities: Increased fuel will be used to remove timber, but the amount of increase will be insignificant.

Aesthetics/Recreation: Because of larger treatment areas the impacts to aesthetics will be greater under this alternative than Alternative 3. Scenic vista and park setting will be changed due to the removal of a larger number of trees at one time. The understory will be opened in some areas creating more of a mosaic effect in forest canopies that currently exist. Some people may not find this as aesthetically pleasing as the current condition. This action will also remove hazardous trees to protect visitors and reduce the potential for catastrophic fire, which would greatly impact the aesthetics of a park area. Visual impacts will be minimized through cutting stumps to ground level or removing them altogether, through the removal of slash through chipping or burning and burying, and through spacing and timing of incursions.

During ongoing management activities, sites would be closed to public use for safety considerations. These closures would be limited in nature and would be timed to avoid peak use seasons when possible.

Cultural/Historical Resources: Impacts from either Alternative 2 or 3 would be the same. Before pre-commercial or commercial thinning, SHPO and the Salish Kooteni Tribe will be contacted to ensure protection of cultural sites. It is not anticipated that hazardous or diseased tree removal will disturb cultural resources. Group selection harvests will be done in winter months to minimize ground disturbance, which could impact cultural or archeological sites.

Alternative 3 (Preferred Alternative): Manage forest health in the following manner:

Routine maintenance and removal of risk trees as needed: Removal of individual diseased or dying trees and removal of hazardous trees are maintenance activities that will be done on an “as needed basis.” A tree will be removed if it is determined to be diseased based on physical deformities, crown health, or symptoms of insect or disease. A tree is deemed to be “hazardous” if it is determined that it poses a safety risk to the public or facilities. A tree may be healthy but hazardous (if leaning over a campsite), or diseased but not hazardous (if it falls, it has no human or structural target).

Detection and Correction of Hazard Trees in Washington’s Recreation Areas will be used as a guiding document for hazardous tree removal. No public notification or involvement will

be sought unless hazardous or diseased tree removal involves more than 5% of the trees on a site. If more than 5% of the trees on a site are deemed to be in need of removal, public notification through legal advertisements and the FWP Internet site will be done.

Group Selection Harvest (<10 acres/3 years): Protect and reproduce ponderosa pine by harvesting encroaching trees for 75-150 feet around existing maternal trees. Treat 10 acres or less per site, with treatments scheduled no more frequently than once every 3 years. Public notification through legal advertisements and the FWP Internet site will be done.

Pre-Commercial Thinning (<10 acres/5 years): Pre-commercial thinning of dense sapling stands to release ponderosa and larch. Trees that are taken are usually no more than five inches in diameter and, while they can be sold for chip, have no commercial value as lumber. FWP would treat no more than 10 acres per site, with treatment frequency at no more than one treatment every 5 years. A forester will be hired to design this type of project. Wildlife biologists will be involved in the design of the project. A walk-through of the project will be held for the public, with public notification through the news media, legal advertisements, and the FWP Internet site. A 30-day public comment period will be held and the project adjusted accordingly.

Pre-Commercial Thinning (>10 acres/5 years): Pre-commercial thinning of dense sapling stands to release ponderosa and larch on larger parcels. Trees that are taken are usually no more than five inches in diameter and, while they can be sold for chip, have no commercial value as lumber. A forester will be hired to design the project, and an environmental assessment will be completed, along with required public notification and comment period. The amount of land to be treated and the frequency of treatment would be determined by the forester hired to design the project based on the goals for each site. It is anticipated that this type of pre-commercial thinning project will occur in conjunction with some commercial thinning to help offset overall costs.

Commercial Thinning: Commercial thinning of dense stands to average 25 feet of spacing is recommended at some sites. A forester will be hired to design the project, and an environmental assessment will be completed, along with required public notification and comment period. The amount of land to be treated and the frequency of treatment would be based on specific project goals and determined by the forester hired to design the project, in consultation with a wildlife biologist. Generally, no more than 50 acres per site would be treated, with a rotation of 3-to-5 years between entries.

Pre-commercial and commercial thinning projects would be coordinated among sites to achieve economies of scale. It is anticipated that projects would include more than one site being treated at a time to reduce costs. Any revenues generated above the cost of replanting and rehabilitation of the landscape would go into the Real Property Trust Account. Interest from that account can be spent as authorized by the legislature.

Cumulative Impact:

Alternative 3, the preferred alternative, is not expected to produce extremely hazardous effects; inaction is anticipated to have extremely hazardous effects. Failure to remove hazardous trees will result in injury to persons or damage to property. Failure to remove diseased trees will impact future forest health. Failure to manage forest health may ultimately result in a catastrophic fire, which would impact recreational property as well as adjacent properties.

Because of the programmatic approach in this alternative and the shortening of the comment period for individual treatments, more frequent, smaller treatments would be expected under this alternative. The result of this would be less visible to the public and more aesthetically acceptable.

Under this alternative it is anticipated that there will be lively debate regarding particular prescriptions on particular pieces of property, what the impacts will be of those actions, and how those impacts will affect adjacent neighbors and the recreating public. It is also anticipated that going through a public comment period before hazardous trees are removed would create liability for FWP until the tree is removed. This document is set up to provide for public comment on actions that will be more controversial, provide information for actions that will not be as controversial, and provide for immediate action for maintenance activities on individual trees to ensure public safety.

Impacts of Alternative 3, the preferred alternative, are covered in Part II of this Environmental Assessment.

2. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

Hazardous tree assessment would be conducted using guidelines set up in literature entitled *Detection and Correction of Hazard Trees in Recreation Areas*.

Best Management Practices Guidelines from the State Lands Division would be followed during harvest of trees.

Wildlife biologists will be consulted while designing any group selection, pre-commercial, or commercial thinning projects.

Certified foresters will be hired to design and implement any pre-commercial or commercial thinning projects.

PART III. NARRATIVE EVALUATION AND COMMENT

1a and b: With the removal of trees, some soil instability could occur. This will be mitigated through the planting of native grasses and shrubs to stabilize the soils. If steep slopes are involved, other methods such as matting or the placement of straw will be used to ensure no erosional gullying or channeling occurs. Management practices will be utilized to minimize soil compaction and disturbance. Factors such as seasonality of management action, equipment type, landform, and soil type will all be considered before management action is taken. Any cuts of over ten acres would require an environmental assessment specific to that project, which would address impacts for the specific project.

1d: Best Management Practices, as set by the Department of State Lands will be followed to minimize impacts to stream banks or beds. Please refer to a copy of Best Management Practices. 2a: During forestry operations some emissions from equipment and dust from ground disturbance will occur. This will be minimal and will end when the forestry project is completed.

3a and 3h: Best Management Practices, as set by the Department of State Lands will be followed to minimize impacts to stream banks or beds. In addition, these practices should minimize turbidity caused by runoff. Please refer to a copy of Best Management Practices.

4a and b: With the removal of some trees, plant species that require increased sun will increase, while shade-tolerant species will decrease. This change will be minor and is a desired outcome of the proposed action. Seeding with native grass mixes will occur after ground disturbance to discourage runoff. In some areas small trees will be planted to encourage a diverse understory and to provide future climax trees.

4c: Most actions proposed under this EA would have no impact on unique, rare, threatened, or endangered species because of their small scale and proximity to areas of concentrated human use. We will develop specific measures to avoid impacts to these resources in any instance where unique, rare, threatened, or endangered species are present within the proposed project area based on site-specific recommendations developed by appropriate specialists.

4e: Seeding with native grass mixes will occur after ground disturbance. In addition, disturbed areas will be monitored for noxious weeds, and mechanical and/or biological controls will be used to repress/eliminate noxious weeds. This work will be done by being incorporated into the Region One Weed Management Program, as kept on file in the FWP Region One Headquarters.

4f: Some trees may be removed from wetland areas if they are determined to be hazardous or are a threat to the health of surrounding trees. Part of the determination if a tree is hazardous is that it has a substantial likelihood of falling and hitting structures, facilities, or people. Since facilities that attract people are normally not built in wetland areas, hazardous tree removal in wetland areas would be minimal. Efforts would be made to do this during winter to minimize ground impacts and would fully comply with Montana Streamside Management Zone laws and rules.

5b and c: Individual hazardous tree removal would have no impact on wildlife species, though individual animals may be impacted if a nesting tree is removed. Wildlife biologists will be consulted on any group selection, pre-commercial thinning, or commercial thinning project to minimize wildlife disturbance.

5h: Grizzly bear are present in areas around Bigfork and west of Kalispell as transients. They are not known to inhabit the state parks and fishing access sites on a regular basis. Wolves are present west of Kalispell and, while they may move through the Thompson Chain of Lakes area, no packs have been identified that are living at Thompson Chain of Lakes. Bald Eagles nest and perch at several locations. The Montana Bald Eagle Management Plan will be followed as to timing of any group selection, pre-commercial thinning, or commercial thinning operations within Bald Eagle nesting or rearing areas, and biologists will be consulted before cutting any nesting or perching trees.

6a and b: During tree removal operations, chain saw and equipment noises will increase noise levels and may cause a nuisance for adjacent neighbors or visitors. Care will be taken to keep activities between 8:00 a.m. and 5:00 p.m. in sites adjacent to residences.

8a and d: The equipment removing timber will use gasoline and oil. Care will be taken to prevent spills and house substances away from dwellings. Large amounts of gasoline or oil will not be stored on site.

8c: Danger would exist for the public if they entered into an area where active treatment is occurring. Therefore, areas with ongoing management activity will be closed until that activity is completed.

10d: Increased fuel will be used to remove timber, but the amount of increase will be insignificant.

11a and b: Scenic vista and park setting will be changed due to removal of some trees. The understory will be opened in some areas creating more of a mosaic effect in forest canopies that currently exist. Some people may not find this as aesthetically pleasing as the current condition. However, this action will also remove hazardous trees to protect visitors and reduce the potential for catastrophic fire, which would greatly impact the aesthetics of a park area. Visual impacts will be minimized through cutting stumps to ground level, or removing them altogether, through the removal of slash through chipping or burning and burying, and through spacing and timing of incursions.

11c: During ongoing management activities, sites would be closed to public use for safety considerations. These closures would be limited in nature and would be timed to avoid peak use seasons when possible.

12a: Before pre-commercial or commercial thinning, SHPO and the Salish Kooteni Tribe will be contacted to ensure protection of cultural sites. It is not anticipated that hazardous or diseased tree removal will disturb cultural resources. Group selection harvests will be done in winter months to minimize ground disturbance, which could impact cultural or archeological sites.

13b: While the proposed action is not expected to produce extremely hazardous effects, inaction is anticipated to have extremely hazardous effects. Failure to remove hazardous trees will result in injury to persons or damage to property. Failure to remove diseased trees will impact future forest health. Failure to manage forest health may ultimately result in a catastrophic fire, which would impact recreational property as well as adjacent properties.

13e and f: It is anticipated that there will be lively debate regarding particular prescriptions on particular pieces of property, what the impacts will be of those actions, and how those impacts will affect adjacent neighbors and the recreating public. It is also anticipated that going through a public comment period before hazardous trees are removed would create liability for FWP until the tree is removed. This document is set up to provide for public comment on actions that will be more controversial, provide information for actions that will not be as controversial, and provide for immediate action for maintenance activities on individual trees to ensure public safety.

PART IV. EA CONCLUSION SECTION

- 1. Based on the significance criteria evaluated in this EA, is an EIS required? YES / NO If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:**

Due to the fact that the impacts from doing this project are minor, while the impacts from not doing this project could be significant, an environmental assessment is the appropriate level of analysis for this proposed action.

Expertise from foresters, SHPO, and biologists will be called upon whenever the potential for impacts becomes larger due to the amount of work contemplated. An individual environmental assessment will be completed for any commercial thinning projects that are anticipated.

- 2. Describe the level of public involvement for this project, if any; and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?**

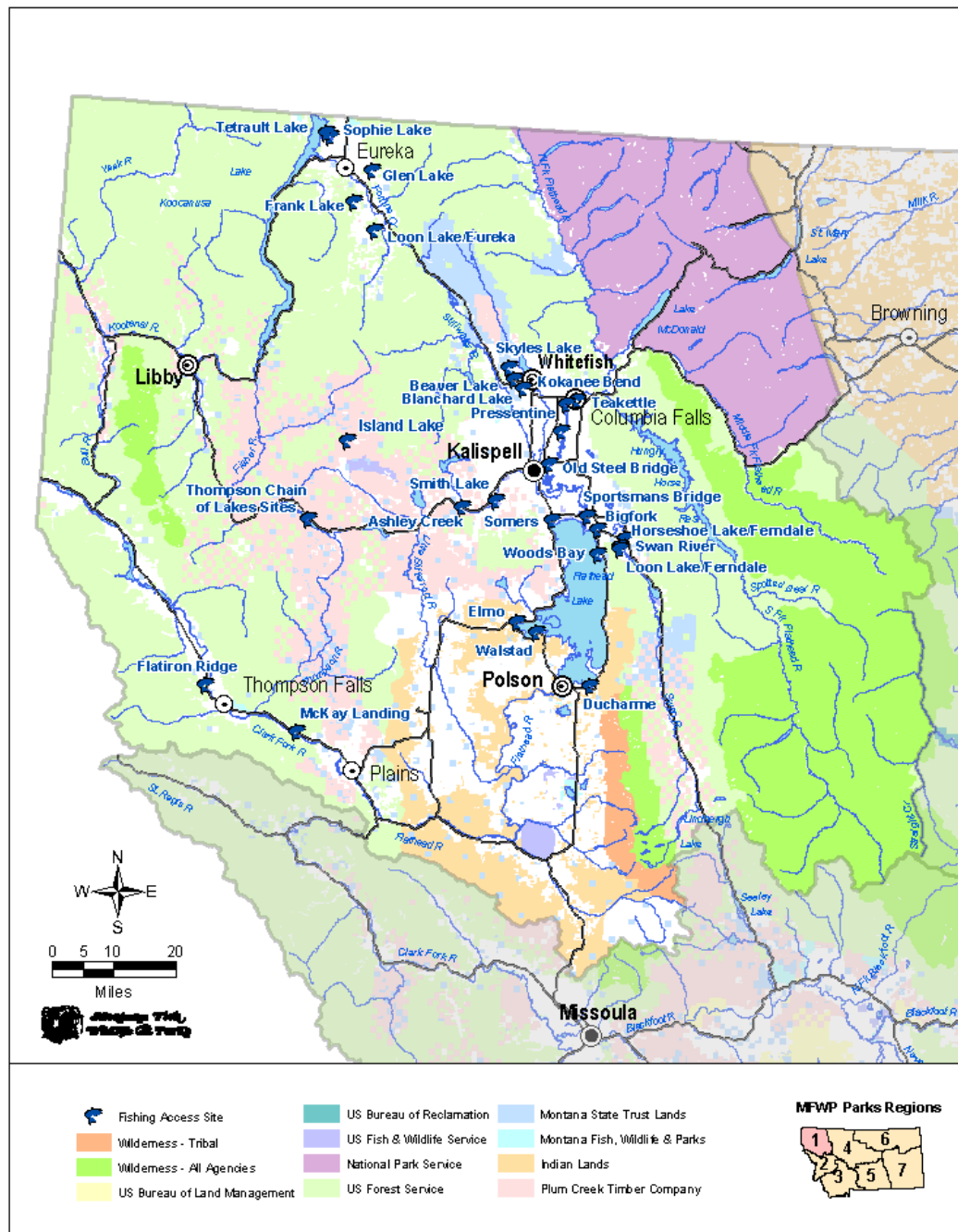
A 30-day internal review of this document by FWP and DNRC was conducted before the document was released to the public. A 30-day public comment period beginning July 25 and ending August 25, 2003, was held. A walk-through at Wayfarers State Park was conducted Tuesday, August 5, 2003. The tour began at the Harry Horn parking lot; and Forester Fred Hodgeboom, who outlined timber issues and proposed treatments, conducted the walk-through. An open house was scheduled to provide information and take public comment on Thursday, August 7, 2003, at the FWP headquarters, 490 North Meridian Road, Kalispell. Notification of the proposed action was placed in legal ads, news releases, and on the FWP web site.

- 3. Duration of comment period, if any:** Thirty days, from July 25 through August 25, 2003.
- 4. Name, title, address, and phone number of the person(s) responsible for preparing the EA:**

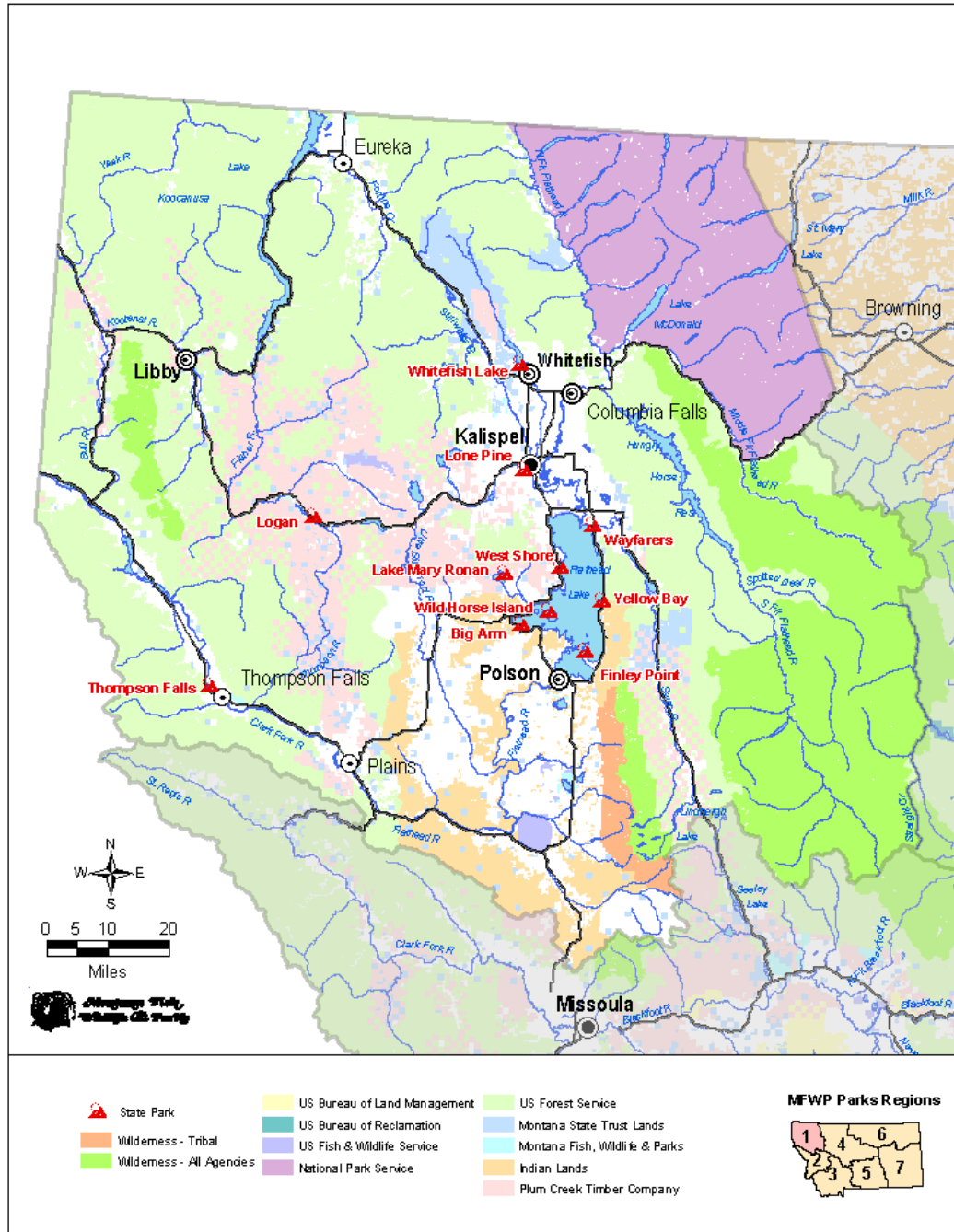
Marty Watkins, Regional Parks Manager
Fish, Wildlife and Parks
490 N. Meridian Road
Kalispell, MT 59901
(406) 751-4573
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Appendix

Appendix B: State Park Fishing Access Sites



Appendix B. Montana State Parks



Appendix C

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, REGION ONE VEGETATION AND HAZARD TREE MANAGEMENT RECOMMENDATIONS

By Fred D. Hodgeboom, Forester

Goal: Fish Wildlife and Parks (FWP), Region One, is responsible for management of several thousand acres of land in state parks and fishing access sites. A large percentage of this land is native forestland. Areas of concentrated public use on these lands range from primitive campsites and hiking trails to highly developed capital investment facilities. FWP desires to maintain these properties over time for safe public use with a forest cover that is healthy and wind resistant.

Introduction: Criteria and guidelines to achieve and maintain the desired condition of the forest cover will require evaluation and monitoring at the individual tree and stand level of management. Individual tree evaluation criteria will be applied primarily within developed and high-use sites to evaluate and remove trees that constitute a hazard to facilities or people should they fall. Individual tree criteria will also be applied when evaluating trees to be left when a stand of trees is being treated. Stands are many trees growing together as a community and provide the general forest cover surrounding developed areas. Stand criteria and guidelines will be applied to undeveloped portions of the properties. Individual tree species criteria and guidelines will be covered first because the species information will be used in the stand evaluations.

Species Criteria and Guidelines: Mature trees in good health are desired in developed areas and areas of concentrated public use. These trees will be left to grow until they exhibit obvious signs of weakness or death. Individual trees are best evaluated for their general health by observing the crown of the tree. The crown is the photosynthetic factory that manufactures food that is transported to the roots through tubes in the inner bark of the tree. The leaves transpire water transported from the roots through tubes in the sapwood of the tree. When the crown is dense and green with live branches 50% or more of the tree height, it is usually a healthy tree. A tree with 1/3 or less of its height in live limbs is usually a weak tree predisposed to insect, disease, and breakage by wind and snow. Physical deformities caused by disease or mechanical damage from snow, wind, fire, or human activities must be observed. Broken tops may cause a limb to turn up and grow a new top with a sharp crook, or a fungus may cause a "catface" that will weaken a tree stem. Symptoms of insect and disease as well as physical deformities must be observed to determine if the tree may be a hazard by posing a risk of falling on improvements or people. Specific insect and disease symptoms common to each tree species are described below.

Ponderosa pine (*Pinus ponderosa*). Old growth ponderosa pine, with the classic yellow-orange bark deeply fissured into plates with puzzle-piece scales, is often called yellow pine. The yellow pine is one of the most scenic trees prized as features in the landscape. Immature-to-mature trees with grayish, narrowly fissured bark and many live limbs are called "bull pine" in the timber industry. Ponderosa pine is the State tree, and it

Appendix C

has distinctive, long needles (5-8") borne on a thick twig in bundles of three. Ponderosa pine is probably our most windfirm, fire-, insect-, and disease-resistant species, making it one of the best choices for featuring on recreational sites over the long term. Ponderosa pine has a wide amplitude of growing sites, ranging from the driest sites to support tree growth (about 15 inches of precipitation/year), to grand fir habitats receiving up to 36 inches/year or more. All these features make it a top choice to feature on most FWP sites. Ponderosa pine is a sun-loving species achieving its best growth in full sunlight. It does not compete well in dense stands in competition with more shade tolerant species such as Douglas-fir or grand fir. Research has shown that ponderosa pine does not reproduce well if there are more than 50 mature trees per acre, an average spacing of about 30 feet.

Ponderosa can be attacked by bark beetles (*Dendroctonus* and *Ipps* sp.) especially if under stress from drought and competition in an overcrowded stand. Watch for pitch tubes on the bole of the tree where the insects bore in. Older trees may have some butt rot due to the fungi (*Fomes annosus*). In general ponderosa pine is more resistant to root rots and insects than associated species such as Douglas-fir and grand fir. For mature and old growth trees in a dominant crown position, lightning strikes may pose the most likely risk of death.

Western larch (*Larix occidentalis*). Western larch, usually called larch or tamarack, is unique among the conifers in that its needles turn yellow in October and are shed in November so the trees are bare through the winter. Larch is recognized by its straight form and light, yellow-green, soft needles. Larch is a sun-loving, fire-resistant species adapted to reproducing on open mineral soil sites after a fire or other disturbance exposing mineral soil. Western larch does not reproduce or survive in shaded environments. Larch is one of our most wind-, insect-, and disease-resistant trees. Old growth trees have distinctive buff-orange, fire-resistant bark with puzzle-piece-shaped scales that gives them a featured appearance in the landscape. These attributes along with a long life span (400-700 years) make them one of the most desirable trees to feature over the long term on favorable sites (20+ inches precipitation/yr.). Larch is suitable for featuring on Region One FWP sites except Big Arm, Finley Point, West Shore, and Wayfarers, which are too dry for larch to thrive.

Larch is often affected by the larch casebearer, a small larvae that feeds on new needles soon after they emerge in the spring, often giving the tree a brown look. A new crop of needles will grow in heavily infected trees, so casebearer damage is rarely lethal. A needlecast caused by the *Hypodermella laricis* fungus may also cause needles to turn brown without lethal effects. Dwarf mistletoe also infects larch, causing broom formations in the branches, but is rarely fatal. The most damaging disease in our area is a white heart rot (*Fomes pini*). Heart rot is prevalent on marginal sites for larch such as Lone Pine State Park. Watch for swollen knots and fruiting bodies of the fungi (conks) on the bole of the tree. The presence of ants and woodpecker excavation into the tree usually indicate significant rot weakening the tree.

Douglas-fir (*pseudotsuga menziesii*). Douglas-fir is probably the most common species found on Region One FWP sites. Douglas-fir is second to ponderosa pine in drought

Appendix C

tolerance. Frequent ground fires from Indian burning and natural ignitions used to keep the number of Douglas-fir and other species low before European settlement. Since fire suppression became effective, we have not had the frequent fires for about 100 years. Since Douglas-fir can reproduce in the shade, it has become the dominant tree on most of our valley sites that have not been subject to logging or fire.

Douglas-fir is subject to numerous pests and diseases. Continuous multistoried stands provide the best habitat for outbreaks of defoliating insects (spruce budworm and tussock moth). Douglas-fir bark beetle is a current pest that is increasing to epidemic levels due to the high populations of large Douglas-fir in dense stands that provide optimum breeding habitat. Several years of drought conditions add to the stress, predisposing trees to attack. Watch for fine, brown boring dust in the bark fissures. If the fine, brown dust is there, the tree is probably already dead, but it won't turn red until next spring. By the time the tree needles turn red, the larvae have matured and beetles have flown. If infected trees can be detected and removed before turning red, the larvae are removed and the amount of emerging bugs attacking nearby trees is reduced.

Dwarf mistletoe is widespread in the Douglas-fir of many state parks. There are several state parks that are in relatively warm/dry climate zones favorable to the parasite. Even though infected trees are deformed with the obvious "witches brooms," the infection is not usually fatal. The parasite does weaken the tree and may contribute to increased predisposition to bark beetle attack. Mistletoe spreads very slowly. Young trees growing up under large, infected trees have the biggest risk of infection. Infections can be reduced by pruning infected limbs and removing infected trees.

There are several species of root rot fungi that cause the roots to die. When roots die the tree is at risk for wind throw. Eventually infected trees are killed. Watch for Douglas-fir with a dark staining and pitch around the base of the tree. Trees with thinning crowns (only a few needles on the end of the branches) are signs of root rot. By chopping into the bark at the base of the tree, the fungus can be confirmed by a white matte of fungus between the bark and the wood. One fungus, *Polyporus schweinitzii*, has a large, fruiting body that looks like a dark-colored cow pie growing out of a root near the top of the ground. Douglas-fir that can be confirmed to have root rot should be considered a high-hazard tree.

Lodgepole pine (*Pinus contorta*). Lodgepole pine is recognized by its relatively short (2"), yellow-green needles, two needles to a bundle, and persistent small cones on crooked twigs. Lodgepole pine is known as a pioneer species adapted to quickly reforest areas after a fire. Genetic variation controls cone characteristics in lodgepole. Some trees have cones that open in normal summer temperatures, some have closed cones that require the heat of a fire to open them, and some trees have both open and closed cones. The closed-cone trait ensures that prolific lodgepole seed is scattered after a fire. Nearly pure stands of lodgepole pine result when an area is subject to repeated, severe burns that destroy the seed source of other species. Lodgepole is often the nurse crop that covers an area after a fire and allows the succession of longer-lived, shade-tolerant species such as Englemann spruce, true firs, cedar, or hemlock to become established.

Appendix C

Lodgepole is shade-intolerant, requires 20 inches or more annual precipitation, has rapid young growth, and is relatively short-lived. After age 80, when trees average 8" or more in diameter, tree vigor and growth decrease; lodgepole becomes prime breeding habitat for the mountain pine beetle (*Dendroctonus monticolae*). Mountain pine beetle is the principle enemy of lodgepole pine, often wiping out entire stands in one or two years. Beetle infestations can be spotted by pitch tubes on the bole of trees where adult beetles have bored in. Salvage logging of beetle-killed stands is important if an extreme fire hazard of down dead trees is to be avoided in the future.

Other pests affecting lodgepole are dwarf mistletoe, red heart rot, comandra rust, and Western gall rust. The gall rust deformities are common on branches, and when they occur on the stem of young trees, they cause "catface" deformities which weaken the tree, often causing breakage from snow or wind.

Western white pine (*Pinus monticola*). Western white pine is noted for its straight bole form and fast growth. It is recognized by slender, blue-green needles, five needles to a bundle on the slender twigs, with long drooping cones. Western white pine is a species that is moderate in shade tolerance. It reproduces well in partial shade and requires good soil. It requires a temperate climate with more than 25" per year of precipitation. It is found growing with grand fir, cedar, and western hemlock.

Western white pine is subject to attack by mountain pine beetle, and this insect is often the final cause of mortality of trees infected by disease. Mountain pine beetle attacks can be recognized by pitch tubes where the insect bored into the tree.

White pine blister rust is caused by a fungus that destroys the cambium of the tree much like a cancer on the tree. The fungus affects the needles first then spreads down limbs into the bole. Often the stem of the tree is girdled by the disease, and the top dies or breaks out of the tree. Individual trees have various genetic resistance to blister rust that ranges from complete resistance to very low. Highly susceptible trees usually are killed before they get very old. White pine 70 or more years old that exhibit few symptoms of the disease have a high probability of significant genetic resistance. Signs of the disease are dead and dying limbs, usually midway in the crown, and cancer-like cankers on the stem of the tree. White pines with little or no evidence of blister rust provide diversity and scenic value to the landscape.

Grand fir (*Abies grandis*). The grand fir is a true fir recognized by cones that grow upright on the tree, and then disintegrate when ripe. Grand fir requires more moisture than ponderosa pine, Douglas-fir, or western larch. Grand fir is not found at Big Arm, Mary Ronan, West Shore, Finely Point, and Lone Pine State Park because it requires more than 20 inches of precipitation per year. The warm, moist habitats grand fir requires begin at Yellow Bay and extend north on all FWP sites to Whitefish Lake and beyond. Sites near Eureka, Montana, (Glen Lake and Sophie Lake) are also too dry for grand fir.

Appendix C

Grand fir is a shade tolerant tree that can reproduce and grow in a shaded environment. If there is no disturbance of the site such as fire or logging, grand fir will gradually take over the site, as sun-loving species such as ponderosa pine and larch cannot reproduce.

Grand fir is highly susceptible to several disease and insect pests. Perhaps most common in our region is grand fir's low resistance to the heart rot caused by Indian paint fungus (*Echinodontium tinctorium*). Indicators of this disease are conks and frost cracks. Conks are hoof-shaped growths at branch stubs that produce the spores that spread the disease and are bright orange when cut open. Frost cracks are vertical scars several feet long at the base of the tree, formed as a result of water inside rotten trees freezing and cracking open the bole of the tree. Grand fir is subject to heart rot at an early age. Grand fir infected with heart rot is weakened and presents a greater risk of wind and snow breakage. Often grand fir produces such a mass of cones in the top of the tree, the weight of the cones breaks the top of the tree causing a crook and weak spot in the bole of the tree.

Grand fir is also susceptible to defoliating insects such as spruce budworm and tussock moth. Outbreaks of these insects can kill some trees, but more often cause top kill, which can deform a young tree and cause a severe crook when a limb turns up to become the leader. The most severe insect pest in our region is the fir engraver bark beetle (*Scolytus ventralis*) that is currently becoming epidemic due to several years of drought. The fir engraver beetle is a small beetle that often attacks the top of old trees and young smooth barked trees. The tree bark looks like it has been shot with a shotgun when numerous beetles enter the tree. Fir engraver beetle is currently causing a lot of mortality in grand fir.

Finally, root-rotting fungi such as *Armillaria mellea* and *Poria weirii* attack grand fir at an early age. Similar to Douglas-fir, root rot can be detected by thinning crown, sap oozing around the base, and white fungal mattes beneath the bark at ground level. Due to the number of pests affecting grand fir, it is one of the least desirable species near improvements or in high-use areas.

Western red cedar (*Thuja plicata*). Western red cedar is restricted to sites that exceed 28" of precipitation per year, along with frequent fog or high humidity. It is found at Horseshoe Lake, Swan River, and Whitefish Lake sites. Western red cedar is very shade-tolerant and resistant to insect and disease pests except for the heart rot fungi. Cedar affected by rot is often drilled by woodpeckers, and rotten trees can be detected by a hollow sound when hit with an axe or hammer.

Engelmann spruce (*Picea engelmannii*). Engelmann spruce requires a cold, moist environment with 25 inches or more of precipitation. Spruce is found in FWP sites from Horseshoe Lake north to Whitefish and west to Thompson Lakes and Ashley Lake. Englemann spruce is recognized by sharp, square-shaped, blue-green needles, small cones, and scaly bark on older trees. Spruce is shade-tolerant, shallow-rooted, and often grows in wet areas, making it subject to windthrow. Spruce is subject to attack by spruce budworm and especially spruce bark beetle in mature stands. Spruce in thin-barked and

Appendix C

susceptible to fire or mechanical injury. It is also subject to wood-rotting fungi, especially if injured. Spruce is usually a good candidate to thin out of a stand due to the number of problems that affect it.

Subalpine fir (*Abies lasiocarpa*). Subalpine fir is a shade-tolerant true fir recognized by cones growing upright and its distinctive, narrow, pointed, steeple-shaped crown. Subalpine fir requires a cold, moist environment and is limited to higher elevation FWP sites like Thompson Lake and Ashley Lake. Subalpine fir slowly fills in a dense understory in mature western larch and spruce stands. The many persistent limbs on alpine provide a fuel ladder to carry fire into the tree crowns.

Subalpine fir is affected by root and heart rot fungi often making them subject to windthrow and breakage. Subalpine fir is usually a good choice to thin out of a stand.

Black cottonwood (*Populus trichocarpa*). Black cottonwood is found on moist sites near lakes and streams and grows to a large size. Black cottonwood will live well over 100 years. It is recognized by its deeply furrowed, gray bark, sticky resinous buds, and large triangle-shaped, deciduous leaves on a long stem. Cottonwood requires an open, moist, bare-soil seedbed to germinate from seed. Silt deposited by floods provides ideal conditions for seeds to germinate. Cottonwood will resprout from stumps and roots, and cuttings are easily rooted for planting. New sprouts are favored grazing by deer, so planted, rooted cuttings usually need protection.

Cottonwood provides important hardwood diversity in our predominantly coniferous forests, so is a good species to favor on FWP sites. It is common on river sites such as Sportsmans Bridge, Old Steel Bridge, Pressentine, and Kokanee Bend. Cottonwood is subject to wood decay fungi when mature, and hollow trees make good habitat for pilated woodpecker and other wildlife.

Balsam Poplar (*Populus tremuloides*). Balsam poplar leaves are narrower with a more rounded base and sharp narrow tip on a more slender twig compared to the black cottonwood. Balsam poplar has smooth, gray bark and does not grow as large as black cottonwood. The balsam poplar shares very similar silvicultural traits to the black cottonwood and can be managed the same as black cottonwood.

Paper birch (*Betula papyrifera*). Paper birch is easily recognized by its white, smooth bark on young trees and thin, peeling layers on older trees. Paper birch requires cold, moist sites and is shade-intolerant. Birch begins to decline after age 70. It is a relatively short-lived species, rarely exceeding 100 years. Paper birch provides scenic diversity and wildlife habitat value in stands. It is found mixed in grand fir, cedar, and hemlock habitats. It will sprout from stumps and can be rooted from cuttings.

Criteria and Guidelines for Typical Stands of Trees

Sites vary in the types of forests they have the potential to support depending on their location and elevation, which affects mean annual precipitation and temperature. For example the Big Arm State Park is mostly open grassland with a few Rocky Mountain

Appendix C

juniper. Planting trees in this park will probably not be successful unless they are irrigated. Big Arm is located in a rain shadow area where storms subside after lifting over the Cabinet Mountain Range producing an average annual precipitation that is borderline for tree growth ($<16"$), plus the area has a southern exposure. Twenty air miles northeast is the Horseshoe Lake fishing access site, which supports old growth western red cedar. Horseshoe Lake is near the foothills of the Mission Mountain and Swan Mountain ranges where storms begin to lift over the mountains and drop more precipitation ($>34"/\text{yr.}$) along with cold air ponding in the pothole lake that produces cooler soil temperatures. As a result, grand fir and western red cedar adapted to cool, moist sites are common at Horseshoe Lake, and there are even a few subalpine fir normally found at higher elevations.

Each species of plant has evolved genetic characteristics that allow it to survive within a certain range of site conditions. Plants integrate the interaction of climate, topography, and soils so that recognizable communities of plants are produced over the landscape. The study of those plant communities, noting the presence or absence of certain plants, has resulted in a classification system called habitat typing. *Habitat Types of Montana* (Pfister, et. al., 1977) provides a description of the communities and guides for managing vegetation on those sites. For example, Finley Point State Park is a Douglas-fir climax community, so limited in precipitation that most of the area will not support western larch, only ponderosa pine and Douglas-fir. A few poor western larch exist in the bottom of depressions, but planting western larch in Finley Point State Park generally would not be successful. The West Shore State Park is also a Douglas-fir site with only the northwest exposure of the hill and a creek bottom supporting some western larch.

The type of forest stand on a site also depends on the length of time since the last disturbance (fire or logging). In the absence of disturbance, the process of plant succession results in the site being dominated by the species of plants best adapted to the site. For example a fire may result in a forest composed primarily of lodgepole pine. Species such as grand fir or spruce will become established under the lodgepole, and eventually all the lodgepole will die and the forest will be dominated by grand fir or spruce.

Common existing conditions of continuous dense forests full of dead material and ladder fuels are not stable, long-term conditions due to high risk of complete destruction by catastrophic fire. A desired condition of a restored, natural stand structure of open-grown, healthy, mature/old growth trees resistant to fire, insects, and disease must be maintained by periodic biomass removal. Commercial logging along with required slash disposal is the only cost-effective way to manage the accumulation of biomass, which research has shown to have an average energy equivalent to 300 gallons of gasoline per acre per year. Thinning only small trees in the understory is extremely costly, only produces a small, short-term fire control benefit, and makes little change in the potential for a catastrophic, wind-driven crown fire (U of MT). Prescribed burning without associated removal of excess biomass is extremely costly and presents a high liability risk.

Appendix C

Long-term management of forested tracts will require attention to the potential of the site and the state of plant succession on the property in relation to long-term goals or a desired condition of the tract as a whole. This will require management of stands or communities of trees. FWP has many improvements on the forested sites that will require management of individual trees to protect those investments and public safety. As a result FWP must consider the condition of the entire tract in relation to the surrounding area for prescribing treatments of forest stands, and FWP must evaluate individual trees within improved sites for hazardous tree removal. Criteria and guidelines for vegetation management of Region One FWP state parks and fishing access sites are outlined below for typical forest stands found on these properties.

Mature/old growth stands of Douglas-fir and ponderosa pine.

These stands predominate on Finley Point, West Shore, Wayfarers, and Lone Pine state parks where the climate is too dry or borderline for western larch. The stands are characterized by lack of disturbance for several decades resulting in dense, overcrowded stands with lots of dwarf mistletoe infection. Competition for light, water, and nutrients is at a maximum in these stands. Result is stress and increasing mortality due to the combined effects of dwarf mistletoe, root rot, and bark beetles. Douglas-fir bark beetles are rapidly increasing and may continue due to big broods hatching out of the recent large fires and continuing drought. Nearly all these stands can benefit from thinning to a 20-25 foot average spacing, concentrating on removing as much mistletoe-infected trees as possible. Thinning will reduce the probability of a crown fire destroying everything, and it will give the best trees increased light, water, and nutrients they need to resist insect and disease attack and become more resistant to wind.

Thinning to release healthy ponderosa pine should be a primary objective. When there are surviving veteran old growth ponderosa pine or just a good mature tree, survival of specimen ponderosa and introduction of diversity for a new regeneration of pine can be ensured by harvesting all the competing Douglas-fir for a radius of 50-150 feet around the maternal pine. These treatments can be done in stages without treating the whole property at once. For example the first stage might be to make some of the group selection harvests around ponderosa pine that need release and reduction of adjacent fuels in order to preserve them. Then 15 or 20 years later, after new trees are well established as saplings in the openings, a general thinning of the surrounding stand can be done. Mature Douglas-fir stands also predominate on much of the Chain of Lakes tracts.

Mature/old growth mixed species stands. These stands have more species diversity due to more annual precipitation than the ponderosa pine/Douglas-fir stands. These stands may have 7-to-9 species of conifers and a couple of hardwood species. Mature and old growth, mixed stands are found at Yellow Bay, Horseshoe Lake, Swan River, Logan, Harry Horn, and Chain of Lakes. The reduction of the biomass of shade-tolerant species to reduce fire hazard and release shade-intolerant species is a priority in most of these stands. Removing trees for a distance of 50-to-150 feet around ponderosa or larch to be featured in the landscape is one way to protect the featured trees and begin to

Appendix C

recruit some regeneration of the intolerant species. A general thinning of these stands on a 25-to-30 foot spacing guide in strategic areas is recommended (e.g., along borders or downwind southwest of improvements or other areas needing fire protection).

Immature, mixed-species sapling and pole stands. These are stands that have regenerated from recent (50 years or less) disturbances (fire or logging). There are some excellent sapling stands at Woods Bay and Chain of Lakes properties. The sapling stands average less than 5 inches DBH, so they rarely have any commercial value (exception might be Douglas-fir stands that may have some value for Christmas trees). The sapling stands are usually very fast growing and healthy. Overstocking is the biggest problem with these stands, and thinning noncommercial trees is costly. If it is possible, retaining some earnings from sale of commercial trees to invest in improving young stands is a good way to do it. Another possibility is to designate areas of young growth to be thinned as part of a commercial timber sale contract. Uniform thinning of saplings to an average spacing of 10-12 feet between trees is a prescription that will produce healthy stands of pole size trees. Another way is to "crop tree" thin to make sure intolerant trees like ponderosa and western larch survive to become the dominate trees on the site, the best tree is selected, and competing trees are thinned out for 5-8 feet around it. Crop tree thinning is usually less expensive than uniform thinning because all the ground is not treated and fewer trees are cut.

Pole stands are immature stands with 5-to-9-inch diameters. These stands can be treated the same as sapling stands to retain intolerant trees and reduce crown fire potential through thinning, but a wider spacing of 15-20 feet is needed. Usually these stands can be thinned commercially, and the value of the thinned trees can pay for the work and slash disposal and even make a profit if a large enough area is treated.

Mature lodgepole pine stands. Stands dominated by lodgepole pine become mature when their average diameter approaches 8 inches, usually around 70 to 90 years old. Since they become predisposed to mountain pine beetle attack at this age and diameter, it is a good idea to break these stands up by thinning and/or group selection to get a new age class of diverse species started before an epidemic kills most of the stand in a short period of time. There is an example on the north shore of McGregor Lake near the west end where most of the lodgepole was killed in the '80s and is now down in a tangle of dead wood on the ground. Mature lodgepole is found on some Chain of Lakes tracts, usually with some veteran ponderosa pine that need to have the lodgepole around them removed.

Old growth larch/spruce/subalpine fir stands. This type of stand is found on some north slope Chain of Lakes properties around Loon Lake and at Ashley Lake. This is one of the most stable stand structures and may not require much in the way of treatment other than hazardous tree removal. Eventually removal of most of the understory subalpine fir and some of the spruce would make the stands more fire resistant.

Mature cottonwood/poplar /spruce. These stands are common on river and lake riparian areas such as Old Steel Bridge, Kokanee Bend, Pressentine, and Whitefish Lake

Appendix C

sites. Most of these stands are in pretty good shape, not overmature, and will not need much attention for several decades. If a cottonwood sprout appears in a desirable location for a future tree, it may be worth protecting from browsing or other damage until it is big enough to resist damage. Cuttings from excess young sprouts are fairly easy to root and plant early in the spring where additional trees are desired.

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Appendix C

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Appendix D

| Site Name | Existing Type | Climax Type• | Health Rating | Fire Risk | Prescription |
|----------------------|-----------------|--------------------|---------------|-----------|--|
| Big Arm | Grass/Juniper | Grass/Juniper | Good | Low | Routine maintenance, remove risk trees as needed. |
| Blanchard Lake | DF/LPP | Douglas-fir | Good | Moderate | Routine maintenance, remove risk trees as needed. |
| Finley Point | DF/PP | Douglas-fir | Fair | High | Group selection harvest. Protect and reproduce ponderosa pine by harvesting encroaching trees for 75-150 feet around existing maternal trees. Treat approx. 10 acres every 5-10 years. |
| Horseshoe Lake | Grand fir/cedar | Grand fir/cedar | Fair | Moderate | Routine maintenance, remove risk trees as needed. |
| Kokanee Bend | Cottonwood | Douglas fir/spruce | Good | Low | Routine maintenance, remove risk trees as needed |
| Lake Mary Ronan | Douglas-fir | Douglas-fir | Good | Low | Routine maintenance, remove risk trees as needed. |
| Logan | Western Larch | Sub-alpine fir | Fair | Low | Routine maintenance, remove risk trees as needed |
| Lone Pine State Park | Douglas-fir | Douglas-fir | Poor | Moderate | Group selection harvest. Protect and reproduce ponderosa pine by harvesting encroaching trees for 75-150 feet around existing maternal trees. Treat approx. 10 acres every 5-10 years. Commercial thin to 25' spacing approx. 25 acres on west edge. |
| Old Steel Bridge | Cottonwood | Douglas-fir/spruce | Good | Low | Routine maintenance, remove risk trees as needed. |
| Pressentine Bar | Cottonwood | Douglas-fir/spruce | Good | Low | Routine maintenance, remove risk trees as needed. |

• Type of forest that would naturally occur given elevation, soil type, amount of sun and rain received, and normal fire cycle.
Forest Health Final EA 9/3/03

Appendix D

| Site Name | Existing Type | Climax Type● | Health Rating | Fire Risk | Prescription |
|-------------------------|---|--------------------------------|---------------|---------------|---|
| Swan River | Mixed species | Grand fir | Fair | High | Group selection harvest. Protect and reproduce ponderosa pine and western larch by harvesting encroaching trees for 75-150 feet around maternal trees. Treat 10-15 acres within 5 years. Commercial thin dense stands to average 25 ft. spacing (treat 20 acres every 10 years). |
| Sophie/Tetrault | Ponderosa pine | Ponderosa pine | Good | Low | Routing maintenance, remove risk trees as needed. |
| Thompson Chain of Lakes | Predominately Douglas-fir, some mixed species | Douglas-fir/ Sub-alpine fir | Fair | Moderate-High | Group selection harvest. Protect and reproduce ponderosa pine and western larch by harvesting encroaching trees for 75-100 feet around maternal trees (treat about 25 acres every 5 years). Commercial thin dense Douglas-fir stands to average 25 ft. spacing (treat about 50 acres every 5 years). Precommercial thin dense sapling stands releasing ponderosa and larch (treat 10 acres every 5 years). |
| Wayfarers State Park | Douglas-fir and Ponderosa pine | Douglas-fir | Poor | High | Commercial thin dense Douglas-fir stands to 25-30 ft. spacing. |
| West Shore | Douglas-fir/ ponderosa pine | Douglas-fir | Fair | Moderate | Routine maintenance, remove risk trees as needed. Group selection harvest around ponderosa pine (10 acres in 10 years). |
| Whitefish Lake | Cottonwood/ Birch/Spruce | Douglas-fir/ Spruce | Good | Low | Routine maintenance, remove risk trees as needed. |
| Woods Bay | Douglas-fir | Douglas-fir | Good | Moderate | Routine maintenance, remove risk trees as needed around boat launch. Precommercial thin about 10 acres of saplings on west half within 5 years. |
| Yellow Bay | Grand fir | Grand fir | Poor | Low | Release specimen ponderosa pine by clearing out encroaching grand fir and plant a few new pine in opening (one treatment, one acre in next 5 years. |